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# METROPOLITAN DISTRICT COMMISSION



ANNUAL  
REPORT

FISCAL YEAR  
ENDING JUNE 30, 1972

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*John W. Sears*  
*Commissioner*

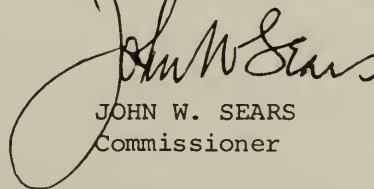
*The Commonwealth of Massachusetts*  
*Metropolitan District Commission*  
*20 Somerset Street, Boston 02108*

To the Honorable Senate  
and House of Representatives:

The Metropolitan District Commission presents herewith a report on activities and other pertinent data for the fiscal year ending June 30, 1972, in accordance with the provisions of Section 100 of Chapter 92 of the General Laws.

An abstract of receipts, expenditures, disbursements, assets and liabilities was submitted earlier. The Commission has also filed legislation previously to be considered by the 1973 session of the General Court, as required by Chapter 30, Section 33.

Respectfully submitted,

  
JOHN W. SEARS  
Commissioner

# COMMISSION, OFFICIALS AND EMPLOYEES

JOHN W. SEARS  
Commissioner

Associate Commissioners  
JOHN A. CRONIN  
JOHN F. HAGGERTY  
ARTHUR T. LYMAN, JR.  
VINCENT P. O'BRIEN

RICHARD I. FURBUSH  
Secretary of the Commission

MARTIN F. COSGROVE  
Administrative Engineer

Executive Assistants  
JOHN J. BEADES  
JOHN W. FRENNING  
JAMES T. O'DONNELL

## DIVISION DIRECTORS

FRANCIS T. BERGIN  
Chief Engineer  
Engineering Division

ALLAN GRIEVE, JR.  
Director of Water Division  
Chief Water Supply Engineer

LAURENCE J. CARPENTER  
Superintendent of Police

ALLISON C. HAYES  
Director of Sewerage Division  
Chief Sewerage Engineer

MASON J. CONDON  
Director of Parks Engineering

WILLIAM T. KENNEY  
Acting Director  
Parks & Recreation Division

Totals of permanent and temporary employees as of June 30, 1972, and June 30, 1971, were as follows:

	1972			1971		
	Permanent	Temporary	Total	Permanent	Temporary	Total
Administration	58	8	66	62	6	68
Engineering	268	--	268	246	--	246
Highway Engineering	--	44	44	--	44	44
Parks & Parks Eng.	657	1017	1674	684	1297	1981
Sewerage	454	2	456	453	13	466
Water	531	77	608	555	80	635
Police	613	--	613	625	--	625
TOTALS	2581	1148	3729	2625	1440	4065



# The Challenge

A fresh outburst of interest in regional solutions for public needs has posed a growing challenge to the Metropolitan District Commission.

The 1972 fiscal year brought a bigger role in functions traditionally linked with the MDC area-wide concept applying to recreation, open spaces, water supply, pollution control, sewerage, law enforcement and traffic.

Pressures mounted for expanding recreation facilities to fill expanding leisure time of adults and to provide wholesome outlets for young people seeking activity.

Awareness of the environment has never been greater, spurring intensive and costly clean-water efforts in rivers, lakes, ponds and Boston Harbor and preserving and acquiring open spaces.

Steadily-rising water use has widened the gap between safe watershed yield and consumption, intensifying the urgency for developing additional water supply sources.

Traditional growth of MDC's Water and Sewerage districts now faces the prospect of accelerated expansion to meet deficient municipal water supply, the need by more communities to connect with a regional sewage collection and treatment system and requirements for more complete wastewater treatment.

These are some of the challenges in providing services to 54 municipalities with a combined population of 2,459,000 people, or 43% of the State's population. The Sewerage District is made up of 43 cities and towns with 2,219,000 inhabitants. The Parks District embraces 37 communities and a population of 2,025,000 and the Water District has 32 members and 1,874,324 residents.

Twenty-three municipalities are members of all three districts, 12 are served by two districts and 19 by one district. In all, 54 communities have joined one or more of the districts to make use of MDC services.

# Meeting the Challenge

The MDC has moved aggressively to meet the expanding demand for regional services by implementing significant projects and activities, developing long-range plans and launching comprehensive studies.

But a history-making leap forward in enhancing the environment and recreational life of Metropolitan Boston came from unprecedented funding legislation, which developed in late June of 1972 when Governor Francis W. Sargent submitted an environmental capital outlay proposal and the Legislature enacted the program which included \$110 million bond issue funding for MDC projects.

The authorization -- largest single money measure in MDC history -- opened the door to a big-scale cleaning of harbor and river waters, a broad recreational development program, acquisition of open space and comprehensive, long-range planning for the sewerage and water systems. It was estimated the cost to MDC districts may run as low as \$31 million after Federal and State reimbursements.

The funding legislation allocated \$83 million for pollution control, \$24 million for the Parks District, \$1 million for water system planning and \$2 million for flood control.

A separate measure provided \$7 million for multi-faceted pollution abatement projects on the Charles River, utilizing novel techniques.

Before these bright horizons were opened, the challenge was being met in many directions.

More skating rinks and swimming pools materialized, along with athletic facilities, fishing spots and greater activity at Hatch Shell and Boston Harbor islands. Rehabilitation of the outmoded and worn-out Franklin Park Zoo was off to an impressive start. Gaps in geographical distribution of facilities were being filled, new recreation activities were devised and existing facilities were given more intensive use.

Progress was recorded in alleviating pollution in Boston Harbor and the Charles and Mystic rivers.

Methods of augmenting water supply for the next decade and setting 50-year planning objectives were taking shape, as the principal supply source at Quabbin rose to a still-inadequate 70.7% of capacity during a record wet year. And a seven-mile long tunnel to bolster the distribution system in the Boston and South Shore areas was nearing completion.

Relief measures for harried motorists on certain choked traffic arteries were under study or nearing the construction stage, while opening of the new Neponset River Bridge between Boston and Quincy has helped South Shore traffic movement.

Coping with the burden of law enforcement and traffic control, the Police Division has vigorously tackled the narcotic drug problem, responded to major civil disturbances with its new specially-trained tactical unit, stepped up Police Academy curriculum and acquired

new-type equipment for highway safety.

MDC's fiscal 1972 expenditure was \$68,693,211, including \$8,004,076 for state highway bond issue projects and flood control and other state-financed authorizations. This compared with \$64,000,529 in 1971, of which \$7,641,547 came from state-financed bond issues.

But the rise in cost of services to cities and towns was less than half of the estimated growth of municipal expenses affecting local tax rates in a five-year comparison for the 1967-71 period -- 27.9% for MDC and 59.5% for municipalities. In the same period county assessments mounted by 60.5% and MBTA assessments rose 135.6% in the MDC area. A breakdown of MDC assessments showed increases of 11.7% for the Water District, 38.8% for Parks and 34.6% for Sewerage. The water rate remained constant at \$120 per million gallons, so the Water District rise simply reflected greater water consumption. Similarly, the sewer assessments, being based partially on capacity use, are affected by increased discharge into the system.

## *The Goal... Improving Quality of Life*

The goal which the MDC has set for itself focuses on improving the quality of life for the residents of the Greater Boston Metropolitan Area.

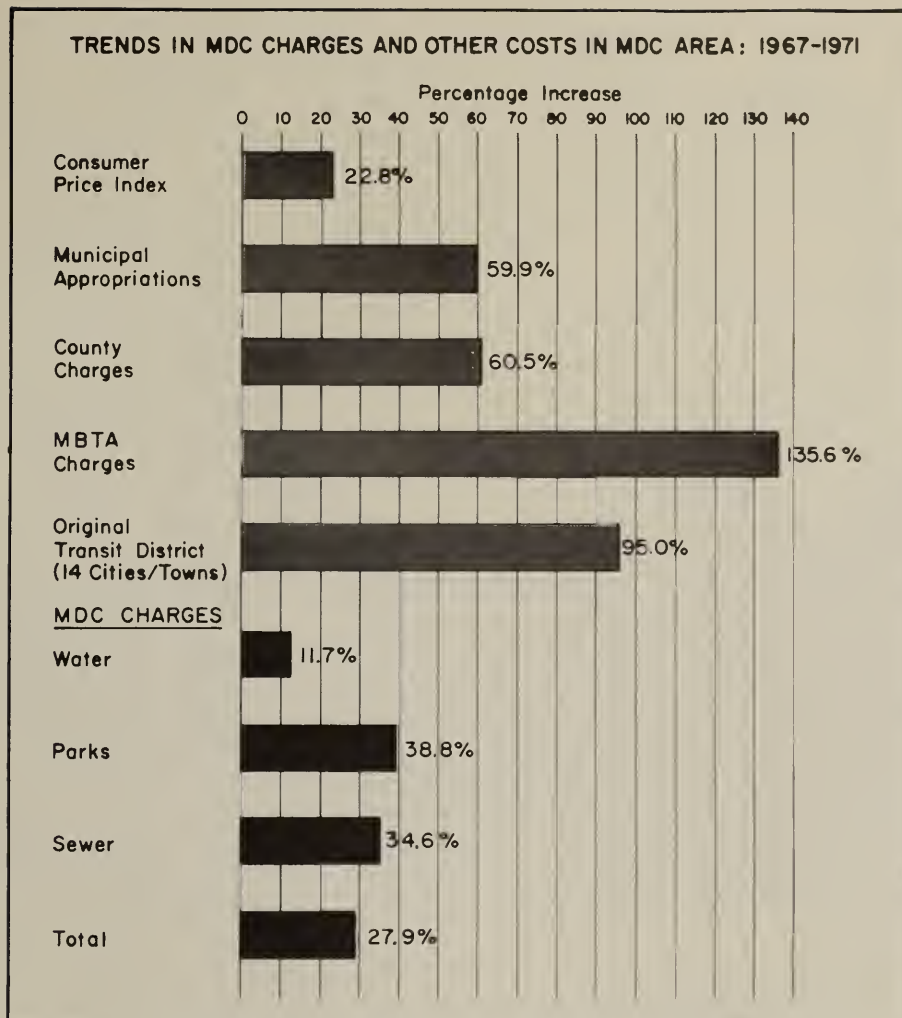
One aspect of this goal is to improve fundamental services -- going beyond merely keeping pace with an expanding population. These services include better water, sewer, recreational and transportation systems, and a more comprehensive and efficient police force.

A second aspect is to preserve fast diminishing open space and to develop new recreation areas to offset the past era of relatively unplanned urban expansion. The acquisition of open land for public use is one of the most urgent requirements of any large metropolitan area. A land use plan must be developed

as soon as possible in the metropolitan area.

The third element of this goal is to improve the quality of water in our streams, ponds, rivers and in Boston Harbor, and there must be adequate pure water to drink and to use for recreation purposes. These waters, wetlands and coastal areas provide an essential habitat for birds and animals, for fish and shellfish and their interrelated food chains.

This goal places a heavy responsibility on the MDC, but it must be achieved if urban existence is to have its necessary balance of work, culture, recreation and tranquility. Our efforts will be achieved only with the support of an informed citizenry actively participating in achieving environmental goals.



(Prepared with assistance of Massachusetts Taxpayers Foundation)

## *New Facilities, Activities Expanding Recreation*

There has been no let-up in the growth of recreation needs by the recreation-oriented urban population of Metropolitan Boston.

The MDC has tried to keep pace with this trend by building facilities, devising new activities, making more intensive use of the existing system and acquiring additional open space.

Progress has been achieved in many directions, such as expanding the network of skating rinks and swimming pools, sailing facilities, bicycle paths, rehabilitation of Franklin Park Zoo, off-season use of skating rinks, programming at Hatch Shell and at the newly-developed free Publick Theatre on the Charles, greater

use of Boston Harbor islands, a variety of innovative activity and a land acquisition program.

The biggest simultaneous development of skating rinks and swimming pools in MDC history was launched during the 1972 fiscal year at an expenditure of \$8 million. Contracts totaling \$5,142,000 were awarded for four rinks, three pools and enclosure of three open-air rinks. Completion of these facilities boosts rinks to a total of 25 and pools to 19. Twelve of the system's rinks are enclosed.

The facilities, widely scattered throughout the Parks District to serve regional purposes, included a rink and



pool complex in Weymouth and rinks in Canton, Waltham and Lynn and pools in West Roxbury and Melrose. The rink enclosures and other improvements were for South Boston, Quincy and Hyde Park facilities. In the design stage were rinks in Boston's North End, North Cambridge and Medford, estimated to cost \$3 million.

#### ZOO TRANSFORMATION MOVING

An encouraging start has been made toward transforming the outmoded Franklin Park Zoo into modern, dramatic and humane animal and bird exhibits.

The rehabilitation program is being spearheaded by the Boston Zoological Society under a zoo management agreement initiated in 1970. The BZS also operates MDC's Children Zoo at Franklin Park, Walter D. Stone Zoo in Stoneham and Trailside Museum in the Blue Hills Reservation, Milton.

Contracts exceeding \$1 million were awarded for reconstructing the range area and the dilapidated birdhouse, along with water, electrical and access road improvements.

Featuring the range display are shallow dry moats replacing fences to permit unobstructed display of hooved animals in a free-running, natural atmosphere.

Among other improvements completed were visitor service areas incorporating rest rooms, concessions and eating plazas, and two parking areas.

In progress is a complete revamping of the old birdhouse into a walk-through flight cage for free-flying birdlife, supplemented by a system of landscaped pools for waterfowl, mammals and fish.

Preliminary designs have been developed for a \$15 million, innovative, outdoor-indoor structure for year-round operation, sprawling over 5 1/2 acres and creating natural settings for animal display through use of hidden moats and backgrounds. This concept is the keystone of plans for converting Franklin Park Zoo into one of the best in the country.

At the Stone Zoo, a hilltop Children's Zoo has progressed to final plans and specifications for an exhibit of baby animals for youngsters to pet, touch and feed, similar to the popular Children's Zoo at Franklin Park.

The MDC's 16-mile stretch of ocean-front was struck by February's northeast storm which damaged seawalls, roadways and parking areas and swept away huge quantities of sand at various beaches. Emergency repairs were completed and an overall \$1.6 million restoration program was launched, financed by Federal disaster emergency funds.

A consultant's study of hydrology and erosion was initiated, seeking an answer to loss of sand from storms and tidal action, a problem that has plagued beaches for many years.

Earlier, a scenic uplift was completed along Lynn Shore Drive in a \$935,000 treatment of Red Rock Park, the seawall, sidewalks and fences.

#### WOLLASTON BEACH IMPROVEMENTS

At Wollaston Beach, plans have been finalized for a revised concept to realign a 3000-foot stretch of Quincy Shore Drive, extending the southerly end of the beach and providing more parking and picnic areas. The project incorporates environmental criteria for protecting Black's Creek marshes and tidal flats, which won favorable comment from the National Park Service and satisfied objections raised by conservationists.

The 1971 season saw inauguration of a parking fee system at Nahant, Revere and Nantasket beaches, resulting in a mixed public reaction. The plan produced modest net revenue of \$45,000 and MDC Police reported it resulted in more orderly traffic and parking, a marked reduction in thefts from automobiles and better beach conditions.

An aesthetic and environmental boost was given to parks, parkways and waterways, as MDC's biggest tree and shrub planting program went into its second year, bringing the total planting to nearly 8000 over the two-year period.





UNIQUE YEAR-ROUND ZOO planned for Franklin Park is shown in interior concept sketch of African exhibit. The indoor-outdoor facility will display uncaged animals separated by moats.

Among other progressing recreation projects were:

- Completion of a 4 1/2-mile bicycle path on Charles River from Longfellow Bridge to Eliot Bridge in Cambridge, which ultimately will stretch nearly 20 miles around the basin.

- A recommendation by an advisory committee to locate a multi-million dollar indoor schoolboy track and sports facility at the Hallet Street dump on the banks of Neponset River in Boston's Neponset section.

- Installation of floats and gangways at Lovell's Island and newly-acquired Peddocks Island; restoration of a guard-house building at Peddocks, including sanitary facilities, and completion of an engineering study of the damaged Georges Island seawall.

#### BIG PARKS DISTRICT DEVELOPMENT

Just ahead is a massive recreational development program -- possibly the largest in MDC history -- kicked off by \$24 million for the Parks District in the MDC's \$110 million environmental capital outlay budget of 1972.

A key phase of the funding is an \$8 million allocation for the year-round animal display structure at Franklin Park Zoo. Boston Zoological Society is expected to raise \$5 million additional and a \$2 million grant will be sought from Federal sources.

The funds also cleared the way for development of Mystic River Basin into a counterpart of the famed Charles River Basin, lined with marine, park and sports recreational facilities, at an estimated

cost of \$5 million. The basin was transformed in 1966 from unsightly, odorous tidal flats into a fresh water expanse by the new Amelia Earhart (Mystic) Dam.

Expenditure of \$1 million is slated for restoring historic Fort Independence on South Boston's Castle Island peninsula and recreational development of the scenic area.

The environmental park projects include a multi-million dollar program of other types of recreational development, open space acquisition, water quality improvement of Muddy River, Pines River, Alewife Brook, Mother Brook, Long Ditch and Neponset River and flood control for streams in Quincy and Braintree.

The funding measure also gave impetus to implementing other master plans for major park development designed to bring a wide variety of active and passive recreational opportunities to every section of the Parks District.

These run the full gamut of recreational outlets -- low-keyed treatment of Cutler Park in Needham stressing preservation of its natural state...restoration of the once great Riverside Park on Charles River in Newton and Weston...a face-lift and further development of Stony Brook Reservation in West Roxbury and Hyde Park...varied improvements and facilities at Constitution Beach in East Boston, Charlesbank Park in Boston's West End and Magazine Beach in Cambridge.

Master plans for recreation projects under the capital outlay program and other improvements have been prepared by MDC's Planning Section.

#### OPEN SPACE ACQUIRED

Preserving and expanding open space for recreation has become more vital than ever to meet existing and prospective needs. To that end MDC has acquired 22 acres in a waterfront peninsula at Stodders Neck in Hingham and averted potential commercial development. For both recreation and flood control purposes, a plan is being implemented for taking 39 acres at Mother Brook in



ENHANCING PARKS and parkways is goal of tree program totaling 8000 plantings in 1971-72.

Boston's Readville section and Dedham. With a recent one-acre acquisition, MDC now owns 19.4 acres, including two mill ponds, a dam and adjacent land. In process, also, is the purchase of 30 acres of surplus Federal land on the southerly end of Deer Island. During the year, the Commission purchased land to enlarge Breakheart Reservation, Cutler Park and the Charles River Reservation.

While new facilities are essential to meeting growing recreational needs, new and more intensive activity programs also play an important role. The MDC has moved energetically in this direction.

Communities were encouraged to develop off-season, vacation-oriented programs at rinks, rather than leave costly facilities idle. Figure-skating classes were expanded. Plans were laid for a street hockey tournament and a state-wide public links championship at Ponkapoag Golf Course. Nature walks were arranged at reservations. The free summer theatre on the Charles River extended its season into the winter months at the former premises of the Institute of Contemporary Arts. Fishing prospects were given a boost by a fish ladder built at Watertown Dam, the





SAILS ALOFT in new sailing program for youngsters at Pleasure Bay, South Boston.



REVIVAL OF RENTAL CANOEING is an objective of planners who are drafting a program for greater recreation activity along Charles River.

first of nine proposed fishways at dams extending to South Natick, and a shore fishing area was opened at the Marlboro end of Sudbury Reservoir. The 1971 fishing season at Quabbin Reservoir saw attendance soar to 54,673 fishermen, an 18% increase over 1970. Quabbin produced the state's biggest landlocked salmon weighing 9 pounds, 5 ounces.

A milestone in outdoor recreation was marked by plans for two sailing programs, one scheduled for opening in late summer of 1972 at Pleasure Bay, South Boston, and the other on the Somerville shore of Mystic River Basin for the 1973 season. Both are patterned after the highly-successful program on the Charles River Basin operated for MDC by Community Boating, Inc.

A mixed and enlarged array of events drew 227,000 to Hatch Shell where 44 performances were scheduled, ranging from traditional Esplanade Pops concerts and a 12-concert "Bach in the Basin" series to jazz, folk and barbershop quartet music, poetry and old-time movies. At beaches and park reservations there were 91 band concerts.

For the first time, the turnout at skating rinks was over the 2 million mark, with a network of 20 rinks in service

during the 1971-72 season.

Public skating accounted for one-half the attendance. The remainder was largely for hockey sessions, supplemented by group lessons in figure-skating and speed-skating, school physical education classes, retarded children groups, hockey clinics and skating parties by organizations.

To supply maximum hockey time, enclosed rinks operated for the second season on a seven-months schedule and open air rinks for five months -- a four to eight-week extension -- running from 5 A.M. to midnight at many rinks. Thus, both the season and the hours of opening have been lengthened. But the 1500 hours available weekly still fell short of requests by 1000 hours.

Bathing at 17 ocean beaches and four fresh-water swimming spots is the most popular summer-time activity, drawing well over 15 million, based on estimates. The network of swimming pools had an attendance of 357,000.

Boston Harbor islands were busier than ever. More than 120,000 visitors flocked to historic Georges Island, a magnet for 200 outings, nearly 100 camping groups and individuals arriving for the day on five

boat lines. Nearby Lovell's Island, equipped with a new pier, drew about 45,000, including many campers and boat owners. Off the Hull shore Peddocks Island was host to 30 outings. The island, acquired in 1970, was available only on a permit basis, pending development of additional accommodations.

#### FREE MUSEUM VISITS

Recreation is linked with education in three ongoing programs for school systems in the Parks District offering classroom groups free museum visits and education-oriented films, lectures and demonstrations.

At the Museum of Science 69,763 MDC-sponsored pupils participated in the learning and fun experience, ranging 62 for Dover to 22,218 for Boston. The Children's Museum recorded 27,011 in school and community groups and Trailside Museum 9,653 for school visitors. Cost of the entire program was \$156,750.

Other activities included:

Blue Hills Ski Area, 35,000 skiers and 25,000 at ski school.

Ponkapoag's 36-hole layout in Canton, 96,468 golfers with a 550 average daily play and 844 on the largest single day's play; Martin Memorial's 18-hole course in Weston, 39,851, with an average of 195 daily and 363 for the greatest day's attendance.

Boston Children's Theatre Stagemobile, two plays at each of 10 locations during school vacation.

Sailing pavilion on Charles River Basin, 1180 junior members and 2900 seniors, equipped with 60 sailboats, six rowboats and three safety launches.

Zoos - Franklin Park, Boston, estimated attendance 400,000; Walter D. Stone, Stoneham, 250,000; Franklin Park Children's Zoo, 154,759; Boston Zoological Society's Zoomobile, 193 appearances; MDC Traveling Zoo, 95 appearances during the summer season.

Trailside Museum, Canton, 79,836.



BIKE PATH running 4 1/2 miles on Cambridge side of Charles River has been completed. The bikeway eventually will extend nearly 20 miles around the river basin for pleasure and commuter use.

Publick Theatre's free performances - estimated attendance for summer season, 10,000; abbreviated first winter season of 1971-72, 2500.

With the approach of the new fiscal year beginning July 1, 1972, cutbacks in operation of pools, beaches, skating rinks and maintenance work were being devised to live within reduced funds voted by the Legislature as part of a general budget percentage freeze.

Affected was a Parks District account of \$4.6 million for temporary or seasonal employees and various other purposes which was cut 20 percent to \$3.7 million. Further complicating the problem was the prospective opening of four new rinks and a year-round swimming pool, as well as the absorption of a 4.3% cost of living pay increase.





FAMED MEMORIAL DRIVE in Cambridge runs along tree-lined Charles River, preserving scenic parkway values.

## *Traffic Relief, Safety Studies Advancing*

Smooth movement of vehicular traffic in Metropolitan Boston has been an elusive goal in the face of constantly mounting volume and peak-hour strain by commuting motorists.

A major responsibility lies with the MDC which patrols and maintains many main arteries and parkways within Route 128 and provides policing of the Northeast, Central Artery and Southeast expressways.

In the post-World War II period the MDC system was forced to absorb the great traffic growth pending implementation of the 1948 Master Highway plan for the Boston Metropolitan area. With solutions to heavy traffic volume moving in the direction of expanded mass transit instead of new expressways, MDC has continued a program of construction and planning to relieve existing bottlenecks and congested thoroughfares.

A new \$10.6 million bridge spanning Neponset River in Dorchester and Quincy was fully opened August 31, 1971, curing a critical trouble spot. Together with highway approach changes, the wider and

higher 800-foot fixed span was designed to relieve South Shore traffic congestion and eliminate delays caused by a half-century-old drawbridge.

The finishing touches were completed, also, for smoother and safer traffic flow on a 1 1/2-mile section of Soldiers Field Road, Brighton. A \$2.5 million project between Eliot Circle and a point just beyond Western Avenue provided a median strip, wider roadway, new lighting, an underpass at Western Avenue and Arsenal Street and extensive landscaping. This is part of a continuous, divided parkway along Charles River from Leverett Circle in the West End to Brighton.

Construction is proceeding on replacement of the worn-out 68-year-old Prison Point Bridge between East Cambridge and Charlestown, which was declared unsafe and torn down in 1970. Designs for the \$3.9 million project were completed by MDC and then turned over to the State Department of Public Works for construction, with 100% Federal funding obtained by DPW under a railroad bridge replacement program. The four-lane structure is being

meshed into a redesigned Rutherford Avenue in Charlestown where DPW is completing major widening and other improvements.

The bridge also ties in with a major traffic relief program for the Northern Artery system from East Cambridge to Wellington Circle, Medford. Plans and specifications are being prepared for MDC's first use of computer-controlled traffic signals, median strip and other upgrading of the 3 1/2 mile stretch.

With heavily-traveled Morrissey Boulevard slated to become the automobile gateway to the new University of Massachusetts-Boston campus at Columbia Point, Dorchester, planning was initiated for an interchange system to ease a growing traffic crunch.

Design work neared completion on a \$4.2 million tunnel carrying south-bound vehicles from Kosciuszko Circle to the campus entrance to be built for MDC by the State Department of Public Works aided by Federal funds. Traffic improvements have also been developed for problem areas in the 1 1/2-mile stretch between the circle and Freeport Street, Dorchester, including possible widening.

Traffic relief is planned, as well, for congestion between the North Station area and Charlestown by a roadway viaduct adjacent to the new Charles River Dam at the former Warren Avenue bridge site.

Consultants have been engaged for study of traffic and safety improvements on two

key roadways, Storrow Drive-Soldiers Field Road in Boston and Lynnway in Lynn. In-house study projects are proceeding for nearly a dozen other important thoroughfares.

A severe problem has arisen from run-down and overburdened bridges which inspectors estimate require replacement or major repair of 17 structures among the MDC's 110 highway, pedestrian and railroad bridges at an estimated cost of \$17.5 million.

Among them are structures dating back to the horse and buggy days and others built for pleasure vehicles on parkway systems and later pressed into service for general traffic and trucking. Some of these critical structures are the Harvard, Wellington, Dorchester Bay and Columbia Road bridges. Work will be financed by allocations from existing and prospective state highway bond issues and Federal funds.

As a vital adjunct to roadway construction, MDC is carrying on a continuous program for improving its traffic light system and modernizing lighting for upgrading safety.

To improve the pleasure qualities of travel on parkways an extensive tree-planting program has been initiated. Increased attention is also being given to planning for recreational and commuter bicycling in response to the increased use of bicycles.

## *Major Pollution Abatement Projects in Progress*

A new era in pollution abatement for Boston Harbor and river waters loomed during the 1972 fiscal year, marked by on-going projects and commitments to broader environmental goals.

Far-reaching vistas opened up with the newly-enacted \$110 million environmental capital outlay budget which earmarked \$83 million for more sophisticated sewage treatment techniques, diverting overflows and a comprehensive wastewater management and engineering study of needs to the year 2050.

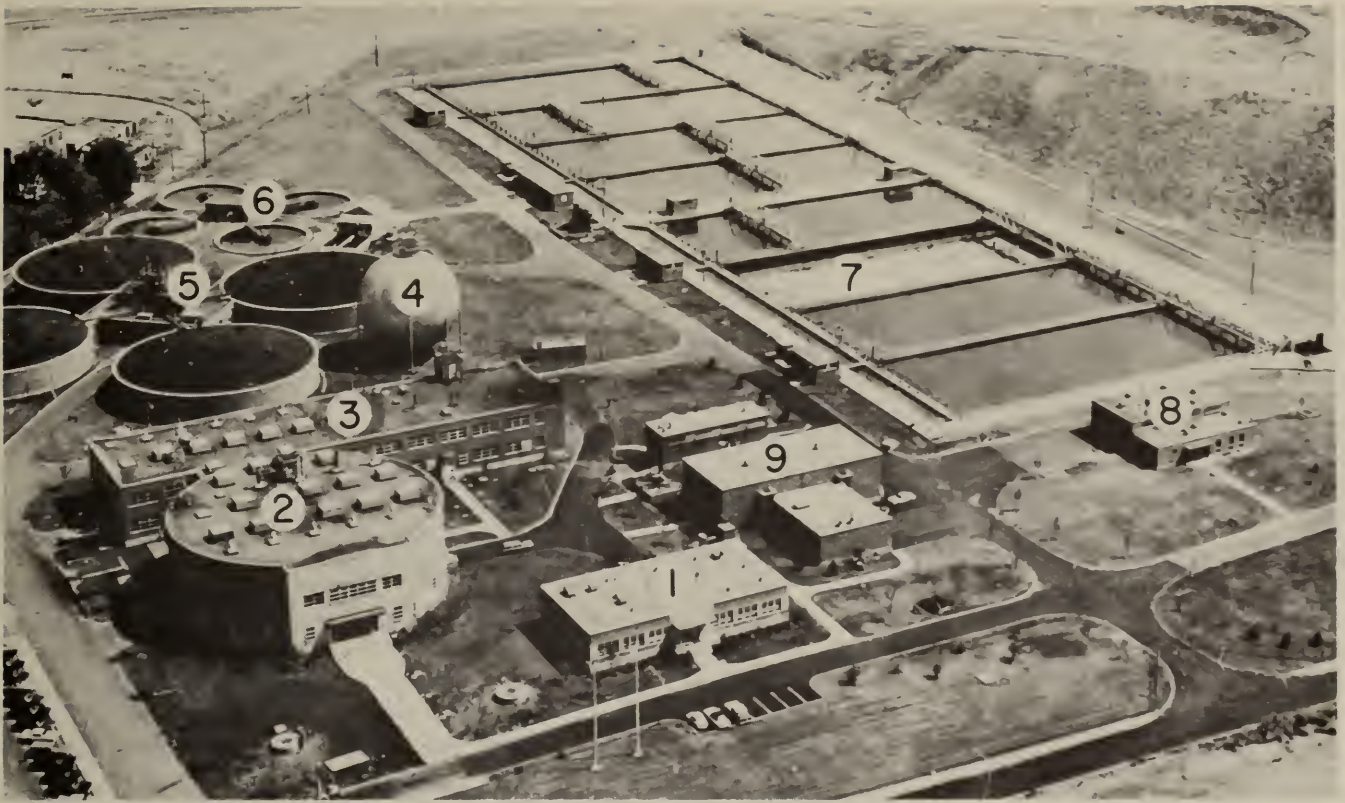
The objectives include:

--Sludge disposal facilities and advanced wastewater treatment for the Deer Island and Nut Island treatment plants in Boston Harbor.

--Pollution abatement projects such as relief and trunk sewers, pumping stations and treatment works to improve waters of Dorchester Bay.

--Rehabilitation of tidegates in





DEER ISLAND SEWAGE TREATMENT PLANT alleviating pollution in Boston Harbor consists of (1) administration building and laboratory, (2) pumping station, (3) power plant, (4) storage sphere for sewage gas used to operate plant, (5) sludge digestion tanks, (6) sludge and scum thickening tanks, (7) sedimentation and settling tanks, (8) chlorine building and (9) Winthrop Terminal headworks. Not shown are pumping station to supply cooling water for equipment, water storage reservoir and garage.

East Boston and Charlestown, supplementing similar work under way on the Boston waterfront to prevent salt water intrusion into the Boston and MDC sewerage systems.

The program is expected to meet the wastewater treatment standards for Boston Harbor now required by the Federal Environmental Protection Agency.

Separate funding earlier in the 1972 legislative session provided \$7 million for innovative clean water projects on Charles River. This supplements \$13 million authorized by 1971 legislation to alleviate overflows of combined storm water and sanitary sewage in the Charles River estuary by a system of conduits, treatment and pumping stations and discharge of treated effluent to tidewater beyond the projected new Charles River Dam.

Meanwhile, nearing completion was a comprehensive sewerage construction program costing \$140 million over a 25-year period, a big head start on the kind of clean-water effort that many metropolitan centers are just beginning.

The forward-looking projects tackled pollution from several directions... nearly 35 miles of big relief and trunk sewers to reduce overflows from mixed storm water and sewage, particularly along the Charles...pre-treatment headworks in Roxbury, South Boston and Chelsea linked to two under-harbor tunnels about 10 miles long...primary sewage treatment plants at Deer Island and Nut Island... the Winthrop Terminal headworks and pumping station serving Winthrop and Orient Heights in East Boston...a novel storm detention and chlorination station near

## B.U. Bridge on Charles River.

The costly, time-consuming effort has shown encouraging results, especially since the 1968 activation of the Deer Island plant and year-round chlorination. Six Winthrop town beaches have reopened. Commercial shellfishing in three areas off Logan Airport and Winthrop have been revived. The outer harbor waters have shown improvement in appearance and quality, according to the State Water Pollution Control Division and the Department of Public Health.

On the Charles, upgraded conditions have been reported, backed by a Federal evaluation which revealed reductions in coliform bacteria counts ranging from 28% to 84% in four basic locations.

## MYSTIC RIVER BASIN PROJECTS

Progress has been made also on the Mystic River watershed, where work has begun on a \$1.6 million clean-water project to carry off overflows of storm water and sanitary sewage discharging into the river basin from Somerville's combined sewerage system. The Somerville Marginal Conduit will be equipped with a facility for removing solids and chlorinating the flow prior to discharge at tidewater below Amelia Earhart Dam. The six-year-old dam has already upgraded the basin by controlling its level, eliminating odorous tidal flats and diminishing salt water intrusion.

Virtually finished was a dual-purpose \$7.1 million flood control project and an adjoining interceptor trunk sewer on Saugus Branch Brook, Malden, a tributary of Malden River which in turn empties into Mystic River Basin. The work is designed to avert flooding and sewer line overflows. Substantially completed was the West End Brook flood control work, also in Malden, under a \$1.4 million contract.

Removal of debris, vegetation and dredging along Alewife Brook from Cambridge to Mystic River was started, while treatment continued on Upper Mystic Lake for aquatic weeds, algae and chlorides.

There was also continued activity for upgrading Boston Harbor waters.

A blow was dealt to a significant pollution source -- defective tidegates in Boston's main drainage system. Many were rehabilitated and others are proceeding to shut off millions of gallons of sea water intruding daily into the Boston and MDC sewer systems at high tide, diminishing normal capacity and flushing sewage into the harbor on each tide cycle.

Modification of a pumping station was completed in a phase of the Squantum Force Main project, designed to end discharge of untreated sewage from Quincy's Squantum section. A 3 3/4-mile line will carry the flow to the Nut Island plant, diverting wastewater from Boston's Moon Island outlet. The facility is scheduled to be operative for the summer of 1973, when a remaining 400-foot section is finished.

Alternatives for disposing of Deer Island sludge, now deposited in the outer harbor, were researched and described in a study report by an MDC Boston Harbor Pollution Task Force. The proposals formed the basis for later assignment of the design phase to a consultant engineering firm.

## CLEAN-WATER PROGRESS ON CHARLES

A new-type anti-pollution weapon was activated on the Charles near the Cambridge side of B.U. Bridge -- a storm detention and chlorination station with a capacity of 233 million gallons per day. The \$4.7 million installation employs an advanced method of handling overflow of combined storm water and sewage. This provides for settling and chlorination before discharging effluent into the river and flushing solids from detention tanks into sewer lines for treatment at Deer Island. The plant was activated 43 times during fiscal 1972, processing 280 million gallons before discharge into the Charles.

A further cutback of polluting overflows was assured by the continuing work on a huge North Charles relief sewer in Cambridge, with two of four sections under contract and a third ready to go. Upon completion, the line will stretch three miles from the vicinity of Mt. Auburn Hospital to Main Street at a cost of \$11.5 million, with a connection to the storm detention and chlorination plant.





WATERWAYS CLEANUP by volunteers ranged from scuba diving for underwater debris off Winthrop Beach to youths at work on Charles River shoreline, shown struggling with logs, lumber, tires, junk and litter.

## *Volunteer Cleanups Show Environmental Concern*

Fresh attention was focussed on the clean waters goal with the creation of a Charles River Task Force, the \$7 million funding in 1972 legislation and an imminent start by the Corps of Engineers on a new \$41.8 million Charles River Dam.

The new bond issue will finance advanced concepts for attacking pollutants, including in-stream treatment of the basin through a chemical and sedimentation process, an aeration technique for upstream locations and other methods of combatting pollution.

From the new Charles River Dam and its pumping station, being built in cooperation with MDC, will come more effective basin flood control and a remedy for salt water intrusion from the harbor into the lower basin, in addition to locks for relieving navigation congestion.

Ecology-inspired demands for higher standards of wastewater disposal and treatment have stirred mounting interest in a tie-in with the Metropolitan Sewerage District by additional communities. The

town of Holbrook became the 43rd member of the district and Weston decided to join the system in preference to an alternate proposal to build local facilities. Ten municipalities have been added to the district since 1945.

Citizen concern over environmental conditions has been dramatically reflected by a massive volunteer cleanup of debris, litter and junk along waterways and in park reservations for the third successive year. On the Charles alone as many as 7,000 to 10,000 dedicated persons have turned out, including youth and adult organizations and municipal and military personnel.

The 1972 operation exploded into a state-wide spring offensive waged by Federal, State and community agencies and an army of volunteers, tackling rivers, beaches, parks and community areas. Officials hailed the efforts in terms of an effective cleanup and creating a sense of public concern and involvement in the environmental battle.

# Growing Water Use Exceeds Watershed Supply

The MDC is running short of water, for consumers are using 21.6 million gallons per day (mgd) more than the system's 300 mgd safe yield. Projections indicate the supply could be exhausted by 1984 based on the continuing rise in consumption and average precipitation.

But preliminary work is progressing to replenish the principal supply source at the giant Quabbin Reservoir and meet needs of the next decade by flood-skimming about 1% of the Connecticut River's excess freshet flow that would otherwise be wasted in the Atlantic Ocean. Other river-tapping sources are under study to satisfy demands well into the '90's, even with anticipated growth of the Water District.

Quabbin has never recovered from the devastating 1961-66 drought which plunged its level to 44.9% of capacity. High point since then was only 70.7% reached in June of 1972.

## AQUEDUCT WORK NEAR

The river-skimming plan will boost the MDC annual supply by an average of 72 mgd -- almost 25% of the current safe yield. The \$35 million project provides for a 10-mile aqueduct linking Quabbin with the Northfield Mt. pumped storage reservoir built by Northeast Utilities for hydro-electric power production. Details of an agreement with Northeast are being finalized.

The Northfield project was approved by legislative action in 1967 but it was delayed by controversy in the river valley, legal complications, the need for additional funding and negotiations with Northeast Utilities.

Meanwhile, much of the groundwork has been completed for an expected construction start in 1973 and a target completion date of 1978. Preliminary steps have included aerial surveys, mapping, field work, engineering studies of the aqueduct route, borings and right of way requirements.

Official findings and scientific studies have concluded that tapping the Connecticut River under stipulated conditions would have no adverse effect on its flow, the river valley nor the environment. Ecological studies of reservoirs and rivers are continuing to further assess the impact of river-tapping.

A report filed with the Legislature during the year indicated that long-range needs may rise from 321 mgd to 475 mgd through 1990. This was based on the prospect of supplementing local sources of 41 communities in addition to 32 members of the Metropolitan Water District and 10 others served under special agreements.

Under law, the MDC must admit to the Water District any community within 10 miles of the State House and any other municipality within 15 miles which the Commission "can reasonably supply with water." Eight of the 41 potential members are within 10 miles, 23 in the 10-15-mile zone and 10 are beyond 15 miles with no option other than MDC for future supply. MDC is also authorized to sell water to communities which can be readily served because of their proximity to storage reservoirs and aqueducts.

## MORE FLOOD-SKIMMING AHEAD

Additional sources listed in the report included flood-skimming the Tully River watershed to supply Quabbin and increasing yield from the MDC Sudbury River system, subject to treatment of freshet flows. The report pointed out the possibility of eventually tapping Merrimack River, also requiring treatment. It has been suggested, too, that the Millers River be cleaned up and used as a supply for Quabbin.

A clear-cut blueprint for the long-range future has been assured by a \$1 million allocation in the 1972 Environmental Capital Outlay Budget for comprehensive study and planning.





QUABBIN RESERVOIR'S GRANDEUR bordered by forests and hills is shown here in part from the Enfield Lookout. The reservoir is 17.9 miles long and 39.4 square miles in area.

No less vital than water supply is MDC's distribution network which is growing steadily to keep pace with mounting demand.

A major step in this direction is the \$19.1 million Dorchester Tunnel, now in its final construction phase, extending seven miles from the City Tunnel at Chestnut Hill to Dorchester Lower Mills. Excavation was finished during the spring of 1972 and concrete lining is in progress.

Another big pipeline project neared completion in Medford and Somerville. The \$4.4 million job provided for tunneling and laying of a 48-inch water main running 2.8 miles to expand quantity and reinforce pressure for 325,000 residents of Medford, Somerville, Arlington, Belmont and Cambridge.

Preparation of an agreement to admit the city of Woburn to the Water District brought plans for still another significant addition to the distribution system estimated at \$4 million. The proposed facilities call for a pumping station in Stoneham on the westerly side of Spot Pond Reservoir and sufficient capacity for eventually serving the towns of Reading and North Reading. The line

will provide connections to fill future needs of Stoneham and Wakefield, which are already district members.

Woburn becomes the 33rd member of the district. The 34th member is expected to be the town of Wellesley, which has voted to apply for entry.

A study was completed on the feasibility of extending the MDC water system to supply the towns of Avon, Braintree, Holbrook, Randolph, Stoughton and Weymouth and increase the supply already being provided to Canton. The report, which was prepared under the terms of 1969 legislation, is now being moved toward implementation.

Growth in the size of oil tankers using Chelsea River has required replacement of one of the two under-river water lines serving East Boston. This is an intricate \$1.3 million project to install a 36-inch water main at a lower level in the ship channel, being built under supervision of the Water Division. It involves temporary bypasses to avoid interruption of supply to East Boston.

In another facet of Metropolitan Water

District operations, an engineering study has begun to determine the best method of fluoridating the system.

Early estimates indicate capital expenditures for buildings and equipment will cost \$700,000, while expense of chemicals and operating the fluoridation process amount to approximately \$300,000 annually. Fluoridation is expected to cost a fraction of what it would cost if each of the cities and towns fluoridated individually.

The fluoridation decision followed a request for an opinion by the Attorney General who ruled that MDC must fluoridate its water supply in view of favorable action by a majority of Boards of Health in the Water District. Health

officials in 28 of the member communities have gone on record for fluoridation.

Still unresolved is the need of a pay-as-you-go method of meeting Water District costs, rather than the practice of piling up debt and interest obligations to defray annual deficits. The existing water rate system has resulted in interest payments on 30-year refinancing bonds that have equalled the original principal, amounting by June, 1972, to over \$90 million in bond indebtedness. MDC is renewing previous legislative proposals to hike the water rate from \$120 per million gallons to \$160 and to return to a modified pay-as-you-go system by allowing for an increase or decrease of the rate by \$5 in any year as required to keep income and costs in balance.

## *Police Cope With Problems Posed by Changing Times*

From its inception in 1893 as an arm of the Metropolitan Parks District, the MDC Police has evolved in modern times into a highly-specialized agency, designed to cope with a changing society.

Confronting the 600-man police force in the past year were by-products of these changes -- civil disturbances, a formidable narcotic drug problem, greater needs for assistance on the part of other police departments, public desire for more professionalization and growing traffic congestion, along with the traditional task of security for the vast MDC recreational, sewerage and water properties.

Drastic measures were taken to deal with the burgeoning drug situation. Young officers were transformed into a kind of "mod squad" unit, enlarged to 12 men and supplemented by a sergeant and six narcotics agents.

Appropriate clothes, hair styles and mannerisms shielded their identity as the undercover men infiltrated the drug-pushing apparatus, scoring impressively in MDC jurisdiction and following trails into various communities.

The disguised officers were pressed into service by nine communities as outsiders to foil recognition. One youthful undercover man enrolled for several months as a high school student, making numerous buys in and out of school, climaxed by a roundup of pushers.

Undercover operations piled up over 100 arrests in various cities and towns and 294 more in MDC jurisdiction during the year. Police also alerted the Federal Bureau of Narcotics and Dangerous Drugs and participated in raids with the agency.

### TACTICAL FORCE TRAINED

The role of MDC Police as a back-up force for other departments was underscored by a record of 1,107 assists, ranging from large mobilization of manpower for disturbances to accidents, traffic tieups, fires and emergencies requiring the K-9 and scuba underwater recovery units.

In preparation for response to disorders and major emergencies 300 men have been given a week's training to produce a specialized tactical force with courses running





READY FOR ACTION - Tactical force lines up for crowd control duty in Government Center disorder.

the gamut from mob psychology and riot formations to techniques of restraint and police behavior.

The unit was called upon for aid at campus disturbances, demonstrations in the Government Center and State House area, outbreaks at Deer Island House of Correction and a youth detention facility, and other disorders.

Another impact of the changing times was felt by the curriculum and intensity of training at the MDC Police Academy. To keep pace with new demands on policemen, classroom work was expanded to such diversified subjects as explosives, sniper counter-measures and ecology. More intensive training was given in psychology, particularly applying to mentally-disturbed persons, drugs and community relations. The course for rookies was expanded from 10 weeks to 12 weeks at the academy and four on the job, although state law requires only 10 weeks. Annual one-week in-service programs were carried on for experienced policemen and a new supervisory training course sharpened ranking officers. Eight new officers from other departments were trained, bringing to 158 the number of outsiders graduated from the academy since it became a regional training school in 1966.

In progress was a far-reaching management study of the operational and administrative setup under a consultant con-



MOUNTED PATROL officers provide surveillance of bridle paths, foot trails and other park facilities.

tract to obtain recommendations for planning and research functions and a central records system.

A new look in equipment is also developing. Recently-acquired items designed for more sophisticated police work include a self-contained communications van, satellite receivers, a mobile generator and four vans for highway enforcement, safety and accident emergencies. The vans carry devices for first aid and rescue, in-depth investigation and a new method of vehicle speed measurement.

Reflecting the scope of the police mission, statistics show crimes against property, such as automobile thefts, larceny and vandalism at 1,892, motor vehicle accidents 5,755, recovery of stolen and lost property \$1,473,645, total crimes 4,312 and arrests 2,182.

A breathalyzer test for suspected drunken driving cases was offered to 227 operators. As provided by law, 160 exercised the option of refusing the test, subjecting them to automatic suspension of their driver's license and court charges. Sixty-three consented to the test, which provided evidence for court appearances. Four were cleared by the test and released.

The K-9 unit was called out on 60 occasions, including 45 assists to other police departments, and the scuba unit 32 times, 25 of these at the request of various police forces.

# *MDC Operations Run By Commission, Six Divisions*

The Metropolitan District Commission's concept is based on the belief that communities in Metropolitan Boston can derive greater benefits with more efficiency and lower costs through regional operation of parks, water and sewerage systems.

Its origin was the Metropolitan Sewerage Commission created in 1889 as the nation's first legally-constituted metropolitan district. Then came the Metropolitan Parks District in 1893 and the Metropolitan Water Board in 1895. The three agencies were consolidated into the Metropolitan District Commission in 1919 for greater efficiency and economy.

Operations are governed by a five-member Commission appointed by the Governor. The Commissioner serves as full-time executive and administrative head of the agency. The four Associate Commissioners attend weekly meetings to set policy, approve contracts and participate in decisions on departmental operations. The Commissioner and Associate Commissioners each have an equal vote, except that "concurrence of the Commissioner and of not less than two Associate Commissioners shall be required for the execution of contracts and of such other official actions of the Commission as may be required by law."

Under the Reorganization Act of 1969 establishing a cabinet system, MDC has been under the jurisdiction of Secretary of Environmental Affairs Charles H.W. Foster, who serves as "the executive officer of the Governor for accomplishing the purposes of his executive office."

In addition to central administrative functions, the MDC is presently organized into six operational divisions: Water, Sewerage, Engineering, Parks and Recreation, Parks Engineering and Police.

A Right of Way Section performs legal aspects of land takings, easements and conveyances. A Planning Section is primarily concerned with park and recrea-

tional development, roadway system improvements, landscaping and open space acquisition. A Financial Division operates a data-processing unit for payroll and other departmental uses, processes all receipts and disbursements, maintains fiscal records and serves as the department's accounting office.

## ENGINEERING DIVISION

The Engineering Division (formerly Construction Division) is responsible for planning, engineering and constructing projects for the Water and Sewerage Districts and flood control. The completed facilities are turned over to the operating divisions for maintenance and operation.

Twenty-five contracts were in various stages of construction during fiscal 1972, totaling \$45,631,840.

Awarded in this period were 10 contracts amounting to \$6,153,835. They included two for the water system at \$183,819, six for sewage disposal or pollution control, \$5,859,681 and two for flood control, \$110,335.

Fifteen were previously awarded and still in progress or completed for a total of \$39,478,005. Two were for water supply totaling \$23,477,290, three for flood control, \$6,909,237, and 10 for sewage disposal or pollution control, \$9,091,526.

## WATER DIVISION

The purpose of the Water Division is to provide a sufficient supply of pure water to member communities in the Metropolitan Water District and such other cities and towns as can be reasonably supplied. Twenty-five communities receive their entire supply and seven a partial supply, with an area of 309 square miles and a population of 1,874,000. Arrangements have been made to admit the City of Woburn as the 33rd member. Ten communities in Central Massachusetts located near



MDC reservoirs and aqueducts are supplied under special agreements.

The Water District's sources are the Quabbin, Wachusett and Sudbury watersheds and the runoff of certain flood periods in the Ware River watershed. Storage reservoirs on these watersheds have a capacity of 495 billion gallons, principally at Quabbin Reservoir with its capacity of 412 billion gallons and Wachusett's 67 billion gallons.

The water supply is delivered to Metropolitan Boston through 121 miles of aqueducts and distributed via 260 miles of pipe lines, almost entirely by gravity flow.

Facilities under control of the Water Division include six storage reservoirs with 467 square miles of tributary watershed, a water surface of 30,000 acres, four hydroelectric power stations, 16 miles of high tension power transmission lines, 12 distribution pumping stations to service high elevations and 16 distribution reservoirs with a capacity of 3.1 billion gallons.

Nine contracts totaling \$1,214,362 were awarded, including a \$1,149,637 project to relocate a large water main under Chelsea River between Chelsea and East Boston. The other work dealt with various maintenance and repair requirements.

#### SEWERAGE DIVISION

The intricate sewerage system and treatment process are under the jurisdiction of the Sewerage Division. Its functions require maintenance and operation of 12 pumping stations, two treatment plants, four pretreatment headworks, a detention and chlorination station for combined storm water and sewage overflows along Charles River Basin and 225 miles of trunk sewers.

Forty-two cities and towns serviced by the Sewerage District have a total of 4,921 miles of local sewers connected to MDC trunk sewers at 1,805 locations, an increase of 86 miles over the previous year. Wastewater from 389,216 individual

connections flow through municipal lines into MDC trunk sewers, an increase of 4,236 over the previous year.

Average sewage load was 457 million gallons per day, passing through primary treatment at Deer Island and Nut Island plants for chlorination and other treatment before discharge into outer Boston Harbor through 10 outfalls.

Holbrook became a member of the district in January, 1971, but is not contributing sewage to the system as yet.

There were 10 contracts awarded or in force for maintenance and repairs, totaling \$96,445.

#### PARKS-RECREATION DIVISION

MDC's newest division is Parks and Recreation, formed in 1970 by combining operation and maintenance of park reservations, recreational facilities and roadways with the Recreation Section. Previously, operation and maintenance functions were administered by district captains of MDC Police. The new agency subsequently also took over the Locks and Drawbridge Section from Parks Engineering Division.

Now the largest division in MDC, Parks and Recreation's responsibilities include five major reservations, 17 miles of beaches, 21 skating rinks, 17 swimming pools, three 18-hole golf courses, 168 miles of roadway, 12,500 acres of parkland and a wide variety of other recreational facilities. The division also has administrative and maintenance responsibilities for zoos.

#### PARKS ENGINEERING DIVISION

Principal function of Parks Engineering Division is to provide engineering services for construction, major repairs and alterations for park facilities, roadways, bridges, locks, drawbridges, street and other lighting systems and traffic lights.

New facilities are designed and constructed under supervision of the division and turned over to Parks and

Recreation for operation and routine maintenance upon completion.

Ninety-nine contracts were awarded, in progress or completed at a cost of \$18,572,165.

### POLICE DIVISION

Primary mission of the Police Division is protection of MDC property and people using its facilities and patrol of 186 miles of MDC roadways and the Northeast, Southeast and Central Artery expressways maintained by the State Department of Public Works. The division also has full police powers in any community where MDC has property.

Its broad responsibility for law enforcement at parklands, waterways, harbor islands and roadways has led to highly-diversified functions and equipment. Among them are K-9, scuba, detective, bomb disposal and narcotic units, a tactical force, regional police academy, a fleet of patrol boats, mounted policemen, breathalyzers, radar and other highway safety and enforcement devices.

MDC Police plays an important role

in assisting local police departments in certain contingencies, particularly requiring specialized training or equipment and greater manpower.

### RIGHT OF WAY FUNCTIONS

The legal aspects of land takings, easements and conveyances are performed by the Right of Way Section, which completed 81 transactions in the past year.

Twelve of these were orders of taking for recreational, flood control, sewer and water line purposes. There were 69 conveyances and miscellaneous matters, such as granting permits, easements, deeds, leases and various other types of instruments.

The section is also responsible for an enforcement unit which handles encroachments on MDC lands, pollution of rivers and streams and other similar violations.

Among other responsibilities are compiling an inventory of MDC lands and relocation of displaced property owners, tenants and businesses.



## MDC Finances

As a regional public agency, the Metropolitan District Commission is financed primarily by assessments on 54 communities which are members of one or more of its three districts - 37 in Parks, 32 Water and 43 Sewerage.

Additional money comes from the State Highway Fund, State General Fund, state allocations for certain flood control projects and miscellaneous revenue such as fees, rentals, licenses, permits, fines, penalties, sales, Federal reimbursements or grants, etc.

The operating budget and bond issues for capital construction are subject to approval by the Legislature and Governor.



Principal financing sources for the three districts are the following:

**PARKS** - Recreational capital construction by bond issues, amortized by assessments based on property tax valuations of communities in the district; maintenance of boulevards and reservations and police costs by 60% from the State Highway Fund, 1% from the State's General Fund and 39% by member cities and towns with one-third based on population and two-thirds on valuation; highway and bridge construction by legislative allocations from state highway bond issues.

**WATER** - Charge of \$120 per million gallons, with special provisions for communities outside the Water District.

**SEWERAGE** - Debt requirements apportioned on the basis of capacity of municipal sewers connected to MDC sewerage system; maintenance expense assessed on the basis of population.

During the fiscal year which started July 1, 1971, and ended June 30, 1972, the Commission spent \$39,586,201 on maintenance and operations. The sum of \$21,102,934 was paid for interest and retirement of bonds issued for capital projects and bonds to cover water fund deficits. The combined expenditure was \$60,689,135.

Additionally, \$8,004,076 was expended for highway construction and certain flood control projects allocated from state highway bond issues and other special authorizations. These are financed by state funds rather than assessments on MDC cities and towns.

The \$68,693,211 total represented 57% for maintenance and operations, 31% for payment on bonded debt and 12% for expenditures from state bond funds not assessed on MDC cities and towns.

#### EXPENDITURES

	1972		1971	
	Operations	Debt	Operations	Debt
Administration	\$756,089	--	\$716,244	--
* Parks	24,592,653	\$4,150,376	22,804,982	\$4,099,051
Sewerage	6,841,356	7,350,545	6,397,027	6,780,943
Water	<u>7,396,103</u>	<u>9,602,013</u>	<u>6,729,846</u>	<u>8,830,889</u>
	\$39,586,201	\$21,102,934	\$36,648,099	\$19,710,883
Total	\$60,689,135		\$56,358,982	

\*Includes cost of MDC Police operations.

Note - An additional \$8,004,076 was spent in 1972 and \$7,641,547 in 1971 for highway construction projects financed by state highway bond issues and flood control and other special authorizations financed by General Fund bond issues rather than assessments on MDC cities and towns.

# PRINCIPAL INCOME SOURCES

	1972	1971	
Parks	\$12,608,369	\$12,048,251	37 Cities & Towns
Sewerage	* 15,797,188	12,221,298	43 Cities & Towns
Water	12,512,424	11,362,163	32 Cities & Towns
State Highway Fund	15,039,780	14,642,830	
State General Fund	220,148	203,265	
Revenue	2,767,888	2,404,548	Admissions, Sales, Fees, etc.
Water Deficit Bonds	3,680,000	3,510,000	
Total	\$62,625,797	\$56,392,355	

\* Includes deferred assessment of \$1,729,454

The Commission continues its efforts to operate managed resources in a business-like manner. It bears repetition that MDC's sale of power, licenses, fees, concession permits, etc., do not accrue to the Commission for re-use, but rather flow directly into the appropriate fund and thereby reduces assessments against cities and towns. Federal reimbursements ordinarily have the same effect.

Largest expenditure of the Commission has been, as always, personnel, shown as follows:

	*NUMBER OF PERSONNEL			EXPENDITURES		
	1972	1971	1970	1972	1971	1970
Administration	66	68	67	\$544,111	\$539,457	\$535,058
Engineering	268	246	201	2,940,438	2,482,421	2,165,684
Highway Eng.	44	44	39	427,007	387,581	398,255
Parks & Parks Eng.	1674	1981	2018	9,148,472	8,668,848	7,747,825
Police	613	625	626	6,931,721	6,363,563	5,135,194
Sewerage	456	466	457	4,336,135	4,132,322	3,760,033
Water	608	635	620	4,916,154	4,643,978	4,396,948
Total	3729	4065	4028	\$29,244,038	\$27,218,170	\$24,138,997

\* Includes permanent, temporary and seasonal employees as of June 30.

Finally, a word must be said about the debt structure for which MDC is responsible. Although there has been a flattening trend in terms of construction in recent years, there will soon again be substantial increases caused by the Water Division's major new Dorchester Tunnel and the Northfield-Quabbin Reservoir aqueduct for diverting excess Connecticut River water. In addition, ongoing wastewater studies, accompanied by strong pressure from the U.S. Environmental Protection Agency will compel a costly upgrading of the Deer Island and Nut Island sewerage treatment systems.

When these prospects are combined with the steady climb in water deficit-financing bonds, it will be seen that the current debt is already overheavy and that its future condition is somewhat alarming.

A significant factor in the Water Fund indebtedness has been the issuance of long-term bonds to cover annual deficits, a procedure instituted by law in 1946 and responsible for borrowing \$94 million in obligations by 1972, of which \$54 million is currently outstanding. Interest payments have practically doubled the cost of payments on deficit debt. A pay-as-you-go system to end this practice has been urged in the past by MDC and the proposal will again be filed with the 1973 Legislature.

OUTSTANDING DEBT, JUNE 30  
(In millions of dollars)

	Sewerage	* Water	Parks	Total
1972	\$95.555	\$129.285	\$40.353	\$265.193
1971	93.659	117.663	37.128	248.450
1970	89.568	113.536	39.353	242.457
1969	88.942	114.509	39.856	243.307
1968	91.889	116.987	39.139	248.015

\* Includes Water Fund deficit debt.



# TOTAL ASSESSMENTS FOR METROPOLITAN DISTRICTS FOR 1971

<i>Cities and Towns</i>	<i>Metropolitan Water</i>	<i>Metropolitan Parks and Boulevards</i>	<i>Metropolitan Sewerage System</i>	<i>Total</i>
Arlington	296,808.48	296,003.54	336,459.77	929,271.79
Ashland			32,258.97	32,258.97
Belmont	113,364.84	227,553.44	155,479.22	496,397.50
Boston	6,205,719.96	4,155,277.07	4,557,773.20	14,918,770.23
Braintree		173,091.26	165,829.53	338,920.79
Brookline	323,057.76	503,740.79	300,188.41	1,126,986.96
Burlington			93,426.27	93,426.27
Cambridge	42,880.80	640,265.42	928,811.27	1,611,957.49
Canton	38,608.80	69,261.27	95,186.21	203,056.28
Chelsea	159,154.68	147,285.05	256,132.82	562,572.55
Cohasset		2,516.98		2,516.98
Dedham		160,291.68	184,444.24	344,735.92
Dover		28,646.08		28,646.08
Everett	350,928.00	387,997.59	294,655.01	1,033,580.60
Framingham			238,837.26	238,837.26
Hingham		95,991.60	39,931.01	135,922.61
Hull		65,961.07		65,961.07
Lexington	197,476.32		175,329.18	372,805.50
Lynn		578,707.88		578,707.88
Lynnfield Water District	13,772.76			13,772.76
Malden	302,997.96	292,599.90	314,355.62	909,953.48
Marblehead	97,949.40			97,949.40
Medford	353,905.56	332,777.89	485,221.27	1,171,904.72
Melrose	131,472.96	187,326.58	243,507.86	562,307.40
Milton	110,969.52	193,944.79	222,461.85	527,376.16
Nahant	24,555.48	23,948.69		48,504.17
Natick			148,149.77	148,149.77
Needham	45,511.20	185,569.23	166,469.66	397,550.09
Newton	508,809.96	708,171.09	643,815.22	1,860,796.27
Norwood	168,342.00		147,195.51	315,537.51
Peabody	25,695.72			25,695.72
Quincy	448,599.60	569,239.01	575,614.66	1,593,453.27
Randolph			112,481.61	112,481.61
Reading			82,711.42	82,711.42
Revere	173,016.96	205,557.16	210,389.63	588,963.75
Saugus	130,132.56	109,687.53		239,820.09
Somerville	469,563.72	457,396.37	527,845.27	1,454,805.36
Stoneham	137,461.08	97,447.96	118,685.87	353,594.91
Stoughton			80,566.03	80,566.03
Swampscott	71,553.84	43,203.94		114,757.78
Wakefield	120,597.60	136,031.64	145,251.18	401,880.42
Walpole			72,491.10	72,491.10
Waltham	472,492.32	318,090.72	325,830.42	1,116,413.46
Watertown	209,179.92	253,147.25	233,459.51	695,786.68
Wellesley		225,994.75	132,886.44	358,881.19
Weston	31,446.72	74,743.44		106,190.16
Westwood		67,726.29	65,520.64	133,246.93
Weymouth		330,854.49	264,198.96	595,053.45
Wilmington			64,371.21	64,371.21
Winchester	30,794.40	156,065.77	206,752.21	393,612.38
Winthrop	79,148.28	106,253.83	129,476.57	314,878.68
Woburn			263,998.64	263,998.64
<hr/>				
	* \$11,885,969.16	\$12,608,369.04	\$13,838,450.50	\$38,332,788.70

Note: Assessments for 1971 were received in fiscal 1972.

\*Assessment for water consumption only.

# DISTRICT MEMBERSHIP

	<u>Water</u>	<u>Parks</u>	<u>Sewerage</u>		<u>Water</u>	<u>Parks</u>	<u>Sewerage</u>
Arlington	x	x	x	Revere	x	x	x
Ashland			x	Saugus	x	x	
Belmont	x	x	x	Somerville	x	x	x
Bedford			x	Stoneham	x	x	x
Boston	x	x	x	Stoughton			x
Braintree		x	x	Swampscott	x	x	
Brookline	x	x	x	Wakefield	x	x	x
Burlington			x	Walpole			x
Cambridge	x	x	x	Waltham	x	x	x
Canton	x	x	x	Watertown	x	x	x
Chelsea	x	x	x	Wellesley		x	x
Cohasset		x		Weston	x	x	
Dedham		x	x	Westwood		x	x
Dover		x		Weymouth		x	x
Everett	x	x	x	Wilmington			x
Framingham			x	Winchester	x	x	x
Hingham		x	x	Winthrop	x	x	x
Holbrook			x	Woburn			x
Hull		x					
Lexington	x		x	Totals	32	37	43
Lynn		x					
Lynnfield				(Beyond the Water District the			
Water Dist.	x			MDC furnishes the entire water			
Malden	x	x	x	supply for Chicopee, South			
Marblehead	x			Hadley Fire District No. 1 and			
Medford	x	x	x	Wilbraham, a partial supply to			
Melrose	x	x	x	Clinton, Framingham, Leominster,			
Milton	x	x	x	Marlboro, Northboro and Southboro			
Nahant	x	x		and an emergency standby connection			
Natick			x	for Worcester.)			
Needham	x	x	x				
Newton	x	x	x	<u>Membership</u>			
Norwood	x		x	3 Districts 23			
Peabody	x			2 Districts 12			
Quincy	x	x	x	1 District <u>19</u>			
Randolph			x	54			
Reading			x				

# METROPOLITAN DISTRICT COMMISSION

District Membership - 1972

Parks - Water - Sewerage

Total Members - 54

Member of all three MDC districts

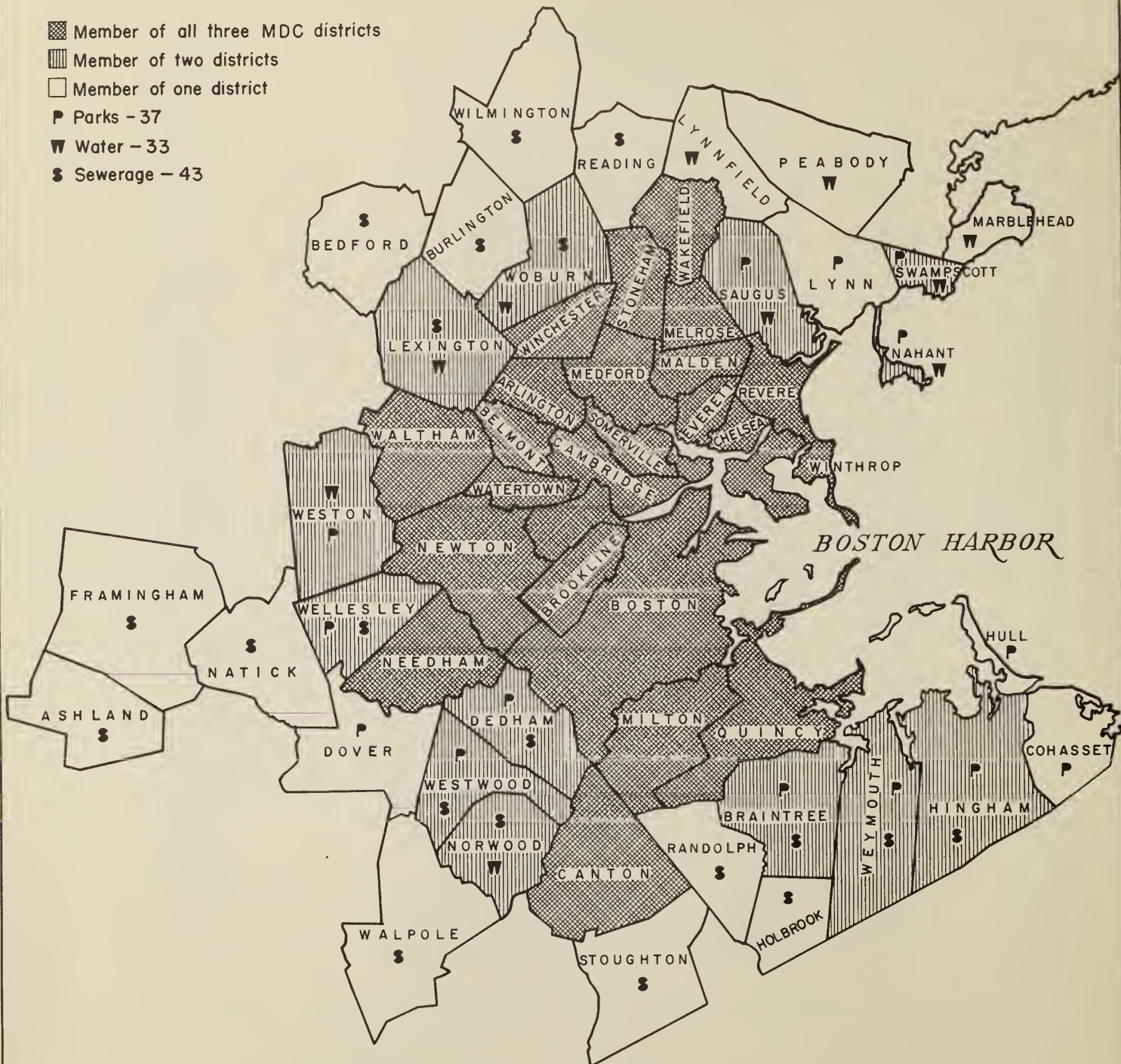
Member of two districts

Member of one district

P Parks - 37

W Water - 33

S Sewerage - 43



Note: Woburn was admitted to Water District August 9, 1972, but received no supply pending construction of a new pipeline and pumping station.





